KM Maturity Models
and
Phased Measurement

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What Is a KM Maturity Model (KMMM)?

- **Analytic tool derived from the Capability Maturity Model (CMM)**
  - CCM = an evolutionary roadmap for implementing vital practices from domains of organizational process
  - Developed by Software Engineering Institute (SEI) at Carnegie Mellon University
- **CMM extended to a "People Capability Maturity Model"**
- **Eventually evolved into Capability Maturity Model Integrated (CMMI)**
  - Combines best practices from numerous CMMs
- **Adapted for KM by Infosys, Siemens and others**

SEI CMMI: http://www.sei.cmu.edu/cmmi/background/conops.html
Siemens: https://www.ct.siemens.com/en/technologies/ic/beispiele/anlagen/kmmm_flyer_en.pdf
Infosys: http://www.infotoday.com/KMWorld2000/presentations/kochikar.ppt
Other KMMM: http://www.kmsk.or.kr/admin/symposium/r_upload/A1-3_kankanhalli.pdf

Infosys KMMM Levels and Characteristics

- **Default (lowest)**
  - Undefined
- **Reactive**
  - Basic repeatability
- **Aware**
  - Restricted data-driven decision-making; restricted level of internal expertise; ability to manage virtual teams well
- **Convinced**
  - Quantitative decision-making; high leverage of expertise; productivity through knowledge sharing; proactive change response
- **Sharing (highest)**
  - Strong ROI-driven decision-making; high ability to leverage new ideas; ability to shape change in technology and business environment

Siemens KMMM Levels and Characteristics

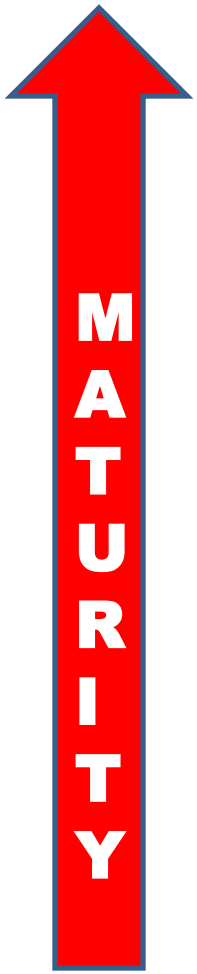
- **Initial (lowest)**
  - Processes aren't consciously planned or controlled, or seen as connected
- **Repeatable**
  - KM is recognized as important; KM pilot projects
- **Defined**
  - Stable and practiced KM activities are integrated into work processes; KM technology maintained; KM roles defined
- **Managed**
  - Common strategy and standardized approaches to KM; robust measurement of KM activities
- **Optimizing (highest)**
  - KM adaptable to new conditions without dropping a maturity level; KM encompasses internal and external changes; KM measurements integrated into business measurements

What Is Phased Measurement?

- **Measurement that's consonant with maturity level**
  - Consonant with objectives
  - Consonant with capabilities
  - Consonant with resources
- **Measurement that progresses from the anecdotal to the quantitative**
  - Anecdotal measurements may have greater relevance at lower levels
    - Demonstrate early success
    - Gain support, generate enthusiasm
  - Quantitative measurements have greater relevance at higher levels
    - Establish trends, validate processes
    - Demonstrate ROI

A *metric* is what numbers signify: visits, page views, downloads, members, alerts, hours, network nodes, publications, dollars, test scores, etc. **A *measurement* is what's being measured:** site traffic, collaboration, distribution, cycle time, networking, knowledge sharing, revenue, learning, etc. A kilometer is a metric in the measurement of distance.

Phased Measurement for a CoP



Level	Infosys	Siemens	Consonant Measurements
5	Sharing	Optimizing	Innovation, Monetary Benefits, Intellectual Capital, Process Improvement
4	Convinced	Managed	Lessons Learned, Systematic Knowledge Transfer (Best Practices), Process Acceleration, KM Integration in Processes
3	Aware	Defined	KM Performance Objectives, External Collaboration, Special Interest Groups, After Action Reviews, Social Networking
2	Reactive	Repeated	Community Activity, Content Management, Publication, Training, Expertise Location, Internal Collaboration
1	Default	Initial	Ad hoc or anecdotal

Measurement Process Steps

- Identify desired outcomes
- Identify measurements
- Identify methods
- Gather metrics
- Analyze results
- Report results
- Manage the process

Identify Unit Outcomes

- **Align with organization objectives**
  - The organization can be a department, agency or smaller entity that a unit supports
- **Derive from the unit's mission**
  - Measurements should validate "mission accomplished"

Metrics and measurement aren't ends in themselves. They need to serve a larger purpose.

Identify Measurements

This involves posing and answering questions, such as:

- **"Which measurements can show progress toward achieving an outcome?"**
- **"Which measurements will validate whether an outcome has been achieved?"**
- **"Which measurements can help validate the value of an outcome?"**
  - Example: improved performance can validate a learning outcome
- **"Which measurements can point the way to innovation and new outcomes?"**
  - These often emerge in analysis of results that suggests previously unconsidered outcomes

Identify Methods

- **Methods need to produce accurate (statistically valid) measurements**
- **Methods need to be repeatable to enable trend analysis**
- **Methods need to be cost-efficient and practical**
  - The cost of developing a method shouldn't exceed the value of the measurement
  - It's impractical to employ a method for which there are insufficient resources to execute it properly

Gather Metrics

- **Key issues: frequency, credibility and ease of analysis**
- **Progress toward achieving an outcome requires systematic measurement**
    - Higher-value outcomes require tighter measurement (greater frequency)
    - Lower-value outcomes may permit looser measurement (lesser frequency)
- **Big claims require big documentation**
  - Large survey samples, trends vs. snapshots, statistics from multiple sources
- **Ease of analysis argues for quantitative metrics**
  - Yet qualitative analysis often reveals insights (i.e., new knowledge) that numbers can't yield

Analyze and Report Results

- **Technology can assist analysis to the extent that numbers can be gathered and charted to produce trendlines and such.**
- **But analysis also needs to include narrative explanations of what the trendlines actually mean**
- **Knowledge gained from measurement is useless if it's not:**
  - Credible and actionable
  - Put into the hands of actors (e.g., managers)

Manage the Measurement Process

- **Goal: continuous process improvement**
- **Periodic assessments:**
  - Value of methods
  - Value of measurements
  - Frequency of measurement
  - Efficiency and quality of tools and methods
    - The best tool in 2009 may not be the best tool in 2012
    - Over time, methods become refined through use, or get superseded by other methods

KM Measurement Paradox

- **As KM becomes more integrated into business, it becomes more transparent—it's what the organization "just does"**
  - Increasingly difficult to determine specific impact of KM
  - Increasingly difficult to identify KM practices as discrete activities
  - Increasingly difficult to measure
- **Anecdotal measurements gain renewed relevance**
  - Assign a dollar value, e.g., monetary savings in cycle time
- **Causal models can measure KM impact on processes**
  - But time-consuming and labor-intensive

Causal models:
http://www.apqc.org/portal/apqc/ksn;jsessionid=GWN2NFBGM04AFQFIAJNCFEQ?paf_gear_id=contentgearhome&paf_dm=full&pageselect=detail&docid=120722

About Anecdotal Metrics

- **Anecdotal metrics from derived from free-text responses in surveys can be used . . .**
  - To reinforce what the numbers say
  - To fill gaps in the numbers
  - To validate general activities with specific examples
  - To project future states
  - To garner support for initiatives in the absence of widely accepted standards or statistically valid forecasts
- **Anecdotal metrics include . . .**
  - Success stories
  - Case studies
  - Industry benchmarks
  - Expert testimony
  - Management kudos

Workshop Project

- **Identify the current, expected or previously planned maturity level of your initiative**
- **Identify which measurements you should be gathering at that level**
  - Concentrate on high-value measurements
  - Discard high-cost/low-benefit measurements
- **Identify which measurements are currently being gathered**
  - Systematically and/or rigorously
  - Occasionally and/or casually
- **Close the gaps**
  - If it's worth measuring, it's worth measuring systematically *and* rigorously

Sample Phased Measurement Workbook

Community of Practice Maturity Level: 3					
Maturity Level 3 Attributes: General knowledge of KM practices; CoP portal site deployed with external access; members profiled and trained to publish content; content managed; KM performance objectives established; special interest groups forming; After Action Reviews practiced					
Measurements	**Capability?**	**Resources?**	**Current?**	**Systematic?**	**Managed?**
Community participation tracked	Yes	Yes	Yes	Yes	Yes
Community particpation analyzed	Yes	Yes	Yes	Yes	Yes
Portal traffic tracked	Yes	Yes	Yes	Yes	Yes
Portal traffic analyzed	Yes	Yes	Yes	Yes	Yes
Best Practice capture	Yes	Yes	Yes		
Best practice transfer	Yes				
Best practice reuse	Yes				
Lessons learned capture	Yes	Yes			
Lessons learned transfer	Yes				
Lessons learned reuse	Yes				
KM performance objectives	Yes	Yes	Yes	Yes	
Internal collaboration	Yes	Yes	Yes	Yes	Yes
External collaboration	Yes	Yes	Yes		
KM integration	Yes	Yes	Yes		
Members profiled	Yes	Yes	Yes		
SME directories established	Yes	Yes	Yes		
Education/training required	Yes	Yes			
Process acceleration (anecdotal)	Yes	Yes			
Process acceleration (quantified)					
Innovation (anecdotal)	Yes	Yes			
Innovation (quantified)					
Monetary benefits (anecdotal)					
Monetary benefits (quantified)					
Intellectual capital (anecdotal)	Yes	Yes			
Intellectual capital (quantified)					

Workbook is simple, quick and clean, consisting of binary checklists, like the Discrete Data Analysis Method used in Six Sigma Lean

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